

North Central Research Extension Center-Minot
Canola Flea Beetle Species Survey and Implications for Control
Daniel Waldstein-Area Extension Specialist, Crop Protection

Introduction: Flea beetle control problems are becoming evident in some canola growing areas of Canada. They are beginning to see a shift from the previously dominant, crucifer flea beetle (*Phyllotreta cruciferae*) to the striped flea beetle (*Phyllotreta striolata*) which had been a relatively minor species in the past. Scientists published a study in 2008 that demonstrated reduced efficacy of Helix, Helix Xtra, and Prosper seed treatments against striped flea beetle while control of crucifer flea beetle was very good. Canadian researchers believe the population shift is a result of the differential effectiveness of the seed treatments against the two species of flea beetles.

Purpose: The purpose of this study was to conduct a trapping study to determine the proportion and abundance of different flea beetle populations in canola producing areas of North Dakota.

Results: The striped flea beetle was either absent or comprised a small percentage (<10%) of the total number of flea beetles in spring planted canola fields in North Dakota. The highest number of flea beetles trapped in Canada in 2010 occurred southeast of Regina at 58.8 beetles per trap per day and near Bottineau in North Dakota with 44.8 flea beetles per trap per day. In addition, the flea beetle natural enemy and native wasp parasitoid, *Microctonus vitatae* was found on traps in four locations in the state.

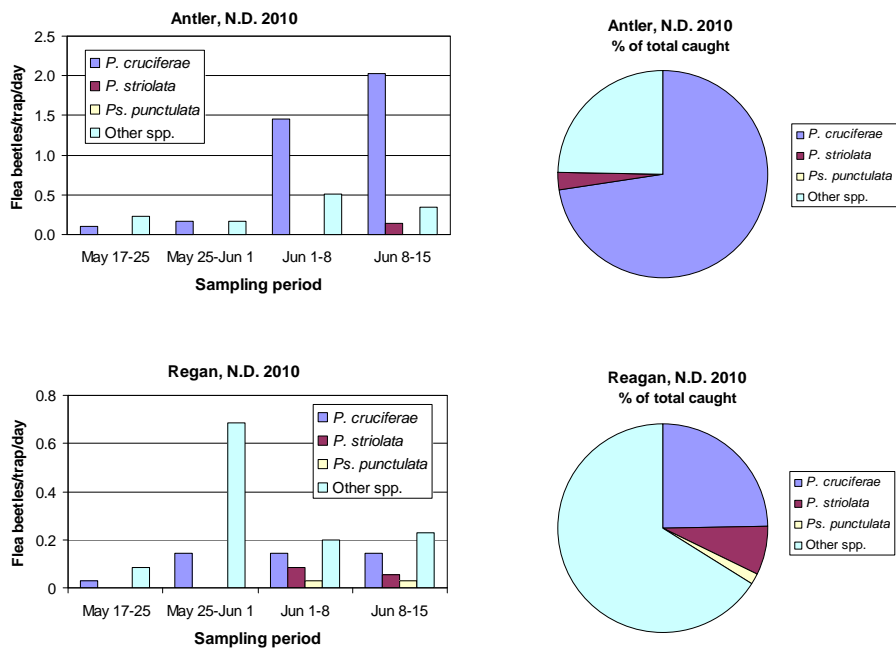
Acknowledgements: This project was done in conjunction with Dr. Julie Soroka, working with the Saskatoon Research Centre in Saskatchewan, Canada. North Dakota collaborators included, Dwain Barondeau and Janet Knodel of the NDSU extension service and Paul Gregor of WinField Solutions/LandOLakes.

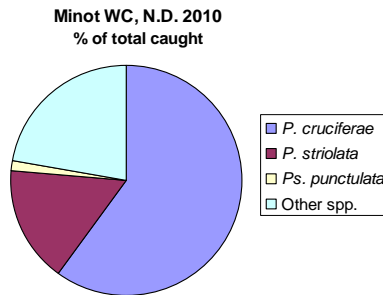
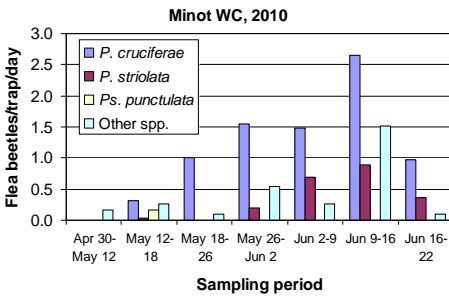
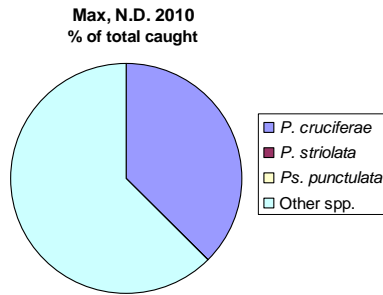
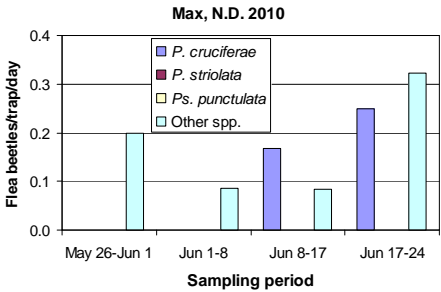
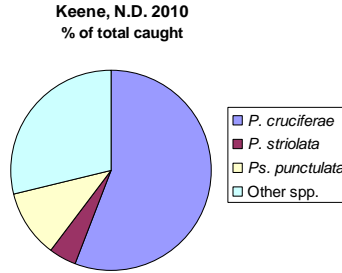
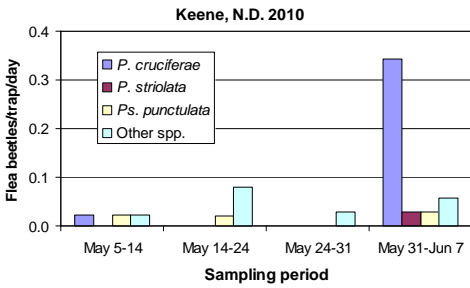
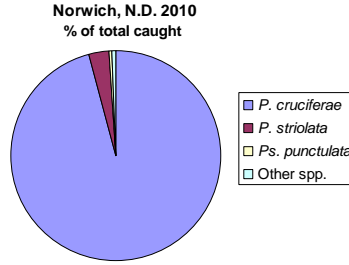
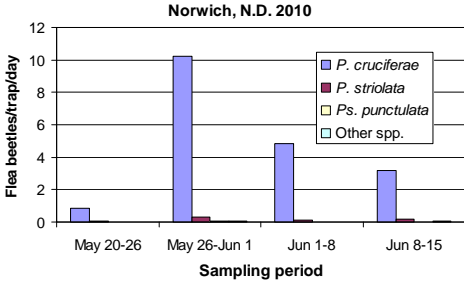
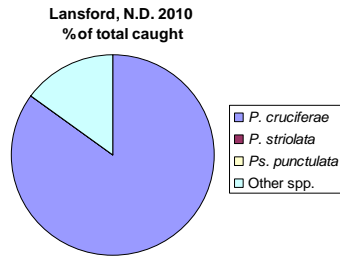
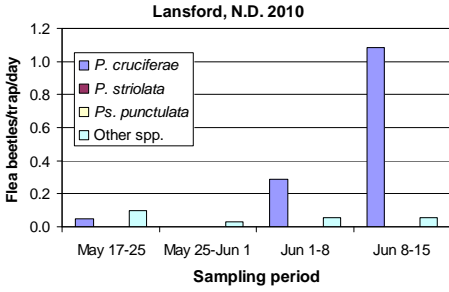
Table 1. Locations of yellow sticky cards used to trap crucifer-feeding flea beetles, dates of occurrence and values for maximum numbers of flea beetles caught in North Dakota in 2010.

Nearest town	Region	Sampling period	Maximum numbers		
			Dates for max. nos.	Flea beetles/ trap/day	Parasitoids present
Langdon	North East	May 27- July 12	June 14-23	11.6	No
Milton	NE	May 25 - June 22	June 2-9	0.43	No
Antler	North Central	May 17 – June 15	June 8-15	2.51	Yes (1)
Lansford	NC	May 17 – June 15	June 8-15	1.14	No
Bottineau	NC	May 25 – June 22	June 9-15	44.8	No
Bisbee	NC	May 21 – June 25	June 18-25	6.46	Yes (2)
Norwich	NC	May 20 – June 15	May 26-June 1	10.6	No
Minot SC	NC	May 10 – June 2	May 26-June 2	3.76	No
Minot WC	NC	Apr 30 – June 22	June 9-16	5.06	Yes (2)
Minot PG	NC	May 26 – June 21	June 15-21	5.75	No

Charlson	North West	May 14 – June 6	June 1-6	1.00	No
Keene	NW	May 5 – June 7	May 31-June 7	0.46	No
Max	Central	May 26 – June 24	June 17-24	0.57	No
Harvey	C	May 26 – June 21	May 26-June 1	2.77	No
Regan	C	May 17 – June 15	May 25-June 1	0.83	Yes (3)
Regent	South West	May 10 – June 7	June 2-7	0.40	No
Mott1	SW	May 3 – June 7	June 1-7	0.33	No
Mott2	SW	May 3 – June 7	June 1-7	0.60	No
Mott3	SW	May 3 – June 7	June 1-7	12.5	No
Mott4	SW	May 10 – June 7	June 2-7	0.32	No
Mott5	SW	May 10 – June 7	June 1-7	0.33	No
Mott6	SW	May 10 – June 7	June 7-	2.91	No
Prosper	South East	June 4 – July 12	June 15-29	4.14	No

Figure 1. Flea beetle numbers and species composition on sticky traps placed in or near canola fields in North Dakota, 2010, Group 1.





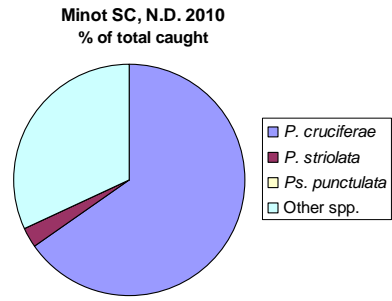
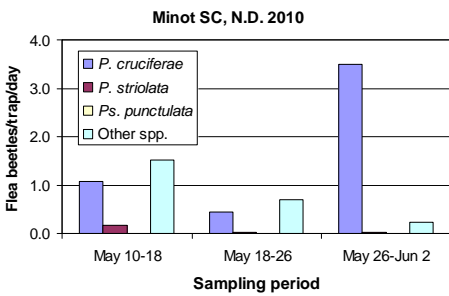


Figure 2. Flea beetle numbers and species composition on sticky traps placed in or near canola fields in North Dakota, 2010, Group 2.

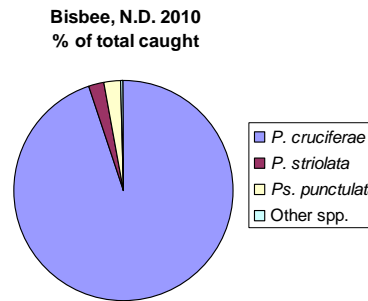
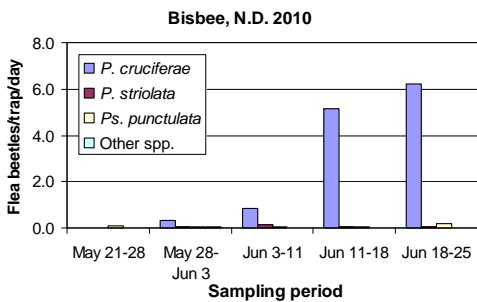
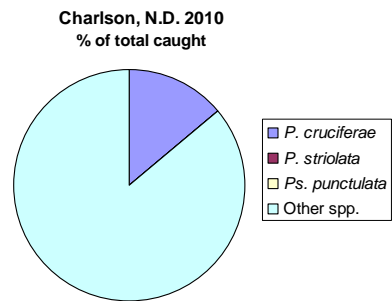
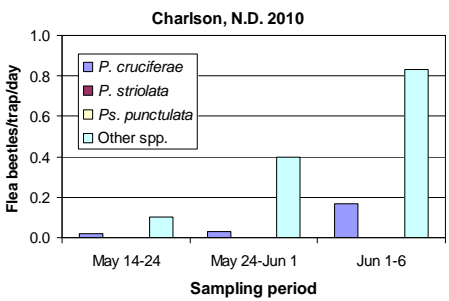


Figure 3. Flea beetle numbers and species composition on sticky traps placed in or near canola fields in North Dakota, 2010, Group 3.

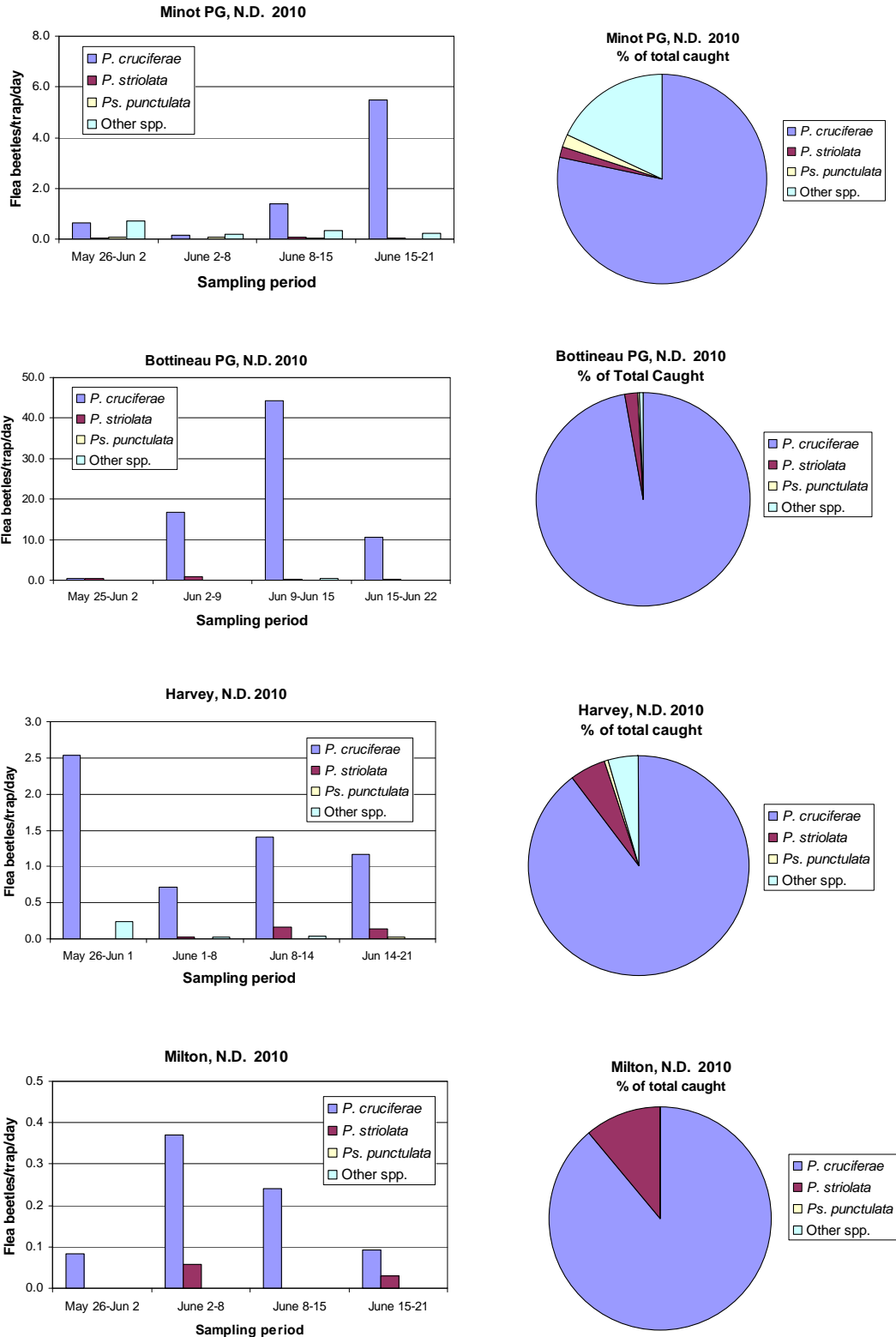


Figure 4. Flea beetle numbers and species composition on sticky traps placed in or near canola fields in North Dakota, 2010, Group 4.

